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09/505,807	02/17/2000	Abraham P. Ittycheriah	YO999-195 (8728-281)	7313

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EXAMINER

FOSTER, ROLAND G

ART UNIT	PAPER NUMBER
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2645

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/505,807

Applicant(s)

ITTYCHERIAH ET AL.

Examiner

Roland G. Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

***Response to Arguments***

Applicant's arguments with respect to claims 1 and 3-27 have been considered but are moot in view of the new ground(s) of rejection. Nonetheless, on page 10 of the amendment, filed on May 30, 2003 as Paper No. 4, the applicant argues that "Woodring [U.S. Patent No. 6,519,686 B2] does not disclose or suggest that the storage manager (350) actually controls the data source (producer) and the plurality of consumers to control the amount of data stored in and consumed from the first queue (buffer) as claimed."

Although the applicant's arguments have been duly considered, they are not deemed fully persuasive. Woodring discloses that the storage manager 350 includes a free buffer semaphore (FBSEM) mechanism 376 (Fig. 4). The FBSEM 376 controls the producer 310 (data source), for example, by signaling the producer that one or more buffers in buffer storage 372 (first queue) are free (col. 7, lines 61-63). The storage manager 350 also includes the producer mutual exclusion mechanism (MUTEX) 374 which controls the producer by placing a requirement on the producer to acquire exclusive ownership (col. 7, lines 52-60) before accessing management data for the buffer

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storage (first queue). The storage manager 350 also includes a variety of mechanisms to control the clients (consumers) as the receive data from the buffer storage 372 (first queue such as the mail slots (col. 7, lines 1-20), management data structure and information streams (col. 7, lines 19-39), and the buffer masks (col. 7, lines 45-52).

Therefore, the applicant's arguments are not deemed fully persuasive and the following rejections are repeated except where any new grounds of rejection is due to the amendment to the claims.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1, 3-6, 8-18, 20-25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,519,686 B2 to Woodring et al. ("Woodring"), of record.

With respect to claim 1, see the following paragraphs for details on how Woodring anticipates particular limitations within the claim.

"[A] first queue for storing data" reads on the abstract, Fig.4, and col. 7, lines 19-67 where the buffer 372 queues data originating from producer 310 for transmission to consumers 0 through N-1.

"[A] data source for outputting the data that is stored in the first queue" reads on Fig. 4, producer 310 that outputs data for storage in buffer 372 (first queue).

"[A] plurality of consumers each sharing the data stored in the first queue" reads on the abstract, Fig. 4, and col. 6, lines 1-32 where a plurality of consumers 0 through N-1 share data stored in buffer 372 (first queue) that was generated by producer 310 as discussed above.

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"[A] scheduler for managing the storage and consumption of the data in the first queue and for controlling the data source and the plurality of consumers to control the amount of data stored in and consumed from the first queue" reads on Woodring as follows. The storage manager 350 manages the storage of data as its name implies including the data stored in the buffer 372 (first queue). The storage manager 350 also stores information related to the each consumers desired sample notification rate. The sample notification rate relates to the amount of data being streamed to each client (col. 8, lines 65-67). The amount of data streamed to each client is consumption data in the first queue by each of the plurality of consumers. Therefore, the storage manager 350 reads on the scheduler. Woodring discloses that the storage manager 350 includes a free buffer semaphore (FBSEM) mechanism 376 (Fig. 4). The FBSEM 376 controls the producer 310, for example, by signaling the producer that one or more buffers in buffer storage 372 (first queue) are free (col. 7, lines 61-63). The storage manager 350 also includes the producer mutual exclusion mechanism (MUTEX) 374 which controls the producer by placing a requirement on the producer to acquire exclusive ownership (col. 7, lines 52-60) before accessing management data for the buffer storage (first queue). The storage manager 350 also includes a variety of mechanisms to

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control the clients (consumers) as the receive data from the buffer storage 372 (first queue such as the mail slots (col. 7, lines 1-20), management data structure and information streams (col. 7, lines 19-39), and the buffer masks (col. 7, lines 45-52).

Claim 16 differs substantively from claim 1 in that claim 16 recites a method whose steps performs functions equivalent to the system components recited in claim 1. Therefore, see the claim 1 rejection for further details.

Claim 23 differs substantively from claim 16 in that claim 23 performs a method equivalent to the method of claim 16. Therefore, see the claim 16 rejection for additional details. In addition, the claim 23 method is performed using program instructions stored on a program storage device and executed by a machine. The queuing method of Woodring is implemented on a computer (Fig. 1) which implements the method using program instruction stored on a program storage device (e.g., memory) and excused by a machine (e.g., a processor). For example, see col. 3, line 61 - col. 4, line 5.

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With respect to claim 3, the producer 310 (data source) comprises PCs 11 and 12 engaged in a video conference (Fig. 1). During the conference, the PC 12 is capable of both transmitting and receiving data (col. 2, lines 57-60). Therefore, PC 12 (comprising the data source) is also a consumer of multimedia streaming data that it receives from the queue of PC 11 (a second queue).

With respect to claims 4-6, 17, 18, 24, and 25, see col. 8, line 50 - col. 9, line 5. The priority request relates to the desired sample rate and to the key attribute.

With respect to claims 8, 20, and 27, each buffer holds an amount of data represented by the buffer size 368 (col. 7, lines 32-35). All consumers allocated to those buffers read out the amount of data stored in the buffer (col. 7, lines 13-18). Only when the last consumer releases from the buffer after reading will the buffer mask 364 be set to zero thereby allowing the buffer to become available for other data consumption uses (e.g., different consumers). Therefore, the storage manager 350 (scheduler) prioritizes data consumption by keeping buffers allocated for at least one consumer if the amount of data stored



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in those buffers is not completely read out (i.e., unread) by that one consumer.

With respect to claims 9 and 21, the system's "engine" (e.g., the processors) are embedded within user stations 11 and 12 as discussed above.

With respect to claims 10 and 22, see col. 2, line 62.

With respect to claim 11, see col. 5, line 11.

With respect to claim 12, the data traffic management that the storage manager 350 (scheduler) performs for each consumer as discussed above represents data traffic that is sent out over the network. Therefore, the scheduler monitors, manages, and schedules data that is sent over the network.

With respect to claim 13, the system is dynamically re-programmed each time a new consumer attaches and registers (col. 8, lines 50-67) as discussed above.

With respect to claim 14, attachment of consumers represents the attachment of video conferencing engine that

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supports both transmit and receive functions so that all the consumers can engage in a video conversation. The attachment process itself also includes conversational engines and functions as discussed above. Finally, the mail slot system also allows the consumers to engage conversationally with the system (col. 7, lines 1-20).

With respect to claim 15, see col. 8, lines 19-22.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to

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point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7, 19, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodring as applied to claims 1, 2, 16, 17, 23, and 24 above, and further in view of U.S. Patent No. 4,916,658 to Lee et al. ("Lee"), of record.

Although Woodring discloses that the scheduler maintains a queue comprising buffers for each consumer as discussed above, Wood fails to disclose maintaining an IN pointer for the data source and an OUT pointer for each consumer.

However, Lee teaches that a commonly used type of buffer is a circular buffer which contains an IN pointer for the source of data and an OUT pointer for the consumer of data (col. 1, lines 10-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to

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add a circular buffer (comprising an IN pointer for the source of data and an OUT pointer) to the buffer for each consumer as disclosed by Woodring. This obvious addition of an OUT pointer to each buffer results in OUT pointer for each consumer because there is a buffer for each consumer as discussed above.

The suggestion/motivation for doing so would have been that circular buffers are "quite commonly used in data processing systems" (Lee, col. 1, lines 24-26). In addition, buffer storage flexibility would have been increased because a "circular queue may contain any number of storage positions" (Lee, col. 1, lines 28-31). However, the "management of the circular queue requires that the 'head' [IN pointer] and 'tail' [OUT pointer] of the queue must be known" (Lee, col. 29-34). Therefore, the obvious addition of just an operational circular queue would have required the use of both an IN and OUT pointer.

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**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

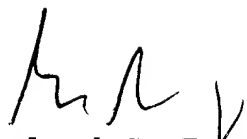
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roland Foster whose telephone number is (703) 305-1491. The examiner can normally be reached on Monday through Friday from 9:00 a.m. to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan S. Tsang, can be reached on (703) 305-4895. The fax phone number for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is (703) 306-0377.



Roland G. Foster  
Patent Examiner  
August 4, 2003